

The perfect entrance

Cost-efficient laser welding system for
small series and individual parts



Various industries, always ready for use: ECO LASER

Electronics



Point welding of keyboards

Tool and die making



Die insert injection molding tool

Medical technology



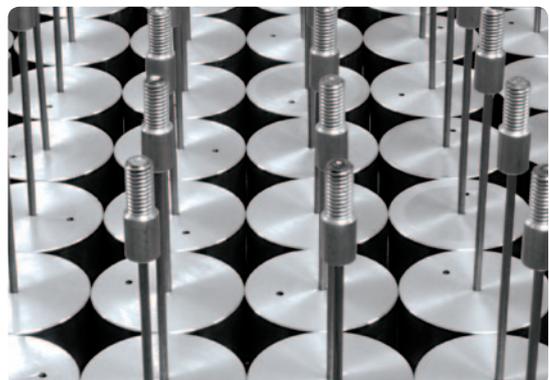
Implants for invasive transplants

Aviation engineering



Engine components for military and civil aviation

Mechanical engineering



Machine parts with complex alloys

Cost effectiveness meets ergonomic design

The rising demand for inexpensive laser welding solutions for very small series or individual parts motivated us to develop a new laser welding system for individual needs. In addition to our own practical experience, we also implemented suggestions from our customers.

The practically-oriented operation of the laser welding system offers sufficient user comfort for efficient laser welding. Continue reading to learn about all the new developments and form your own opinion.



*Dimensions: width 472 x height 1270 x length 1160 mm
Weight: 190 kg net*



ECO LASER system. Uncompromisingly cost-efficient

This new development offers an inexpensive introduction to laser welding, particularly for small-sized companies and young entrepreneurs who make their first steps in this field. Of course, this laser welding system is also suitable for experts who would like to expand their welding capacities. It is small and compact, can be quickly readied for use and is extremely precise in order to satisfy

rising user requirements, such as in tool and die making. No compromises were made in the area of user comfort in particular. The motor-controlled table (x/y/z) with a carrying capacity of 150 kg allows axis-synchronous laser welding. This is also possible with 4 axes in connection with the motorised rotary axis.

Joystick

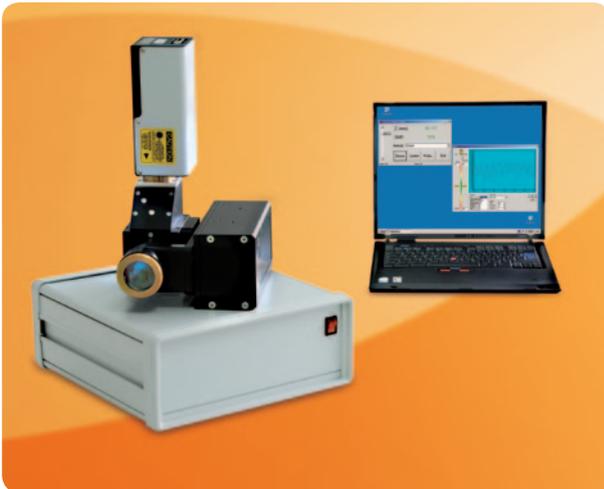
Always at hand and as individual as your working style. Along with the display, the joystick functions as the central operating element. It can be used directly for selecting and executing important functions. This increases the efficiency during laser welding since all laser parameters are directly modified via the joystick.



Higher performance per AUTOFOCUS system (OPTIONAL)

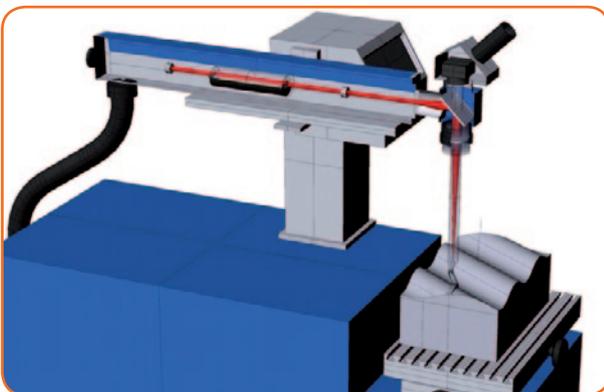
The welding capabilities can be further improved with the AUTOFOCUS system. This optional expansion allows the automated adaptation of the working distance during welding. This automatically corrects for small shape deviations, allowing consistent weld seam quality.

360° rotating optics and telescoping extension are additional optional expansions that make the ECO LASER from O.R. Lasertechnology GmbH an even more efficient laser welding system.



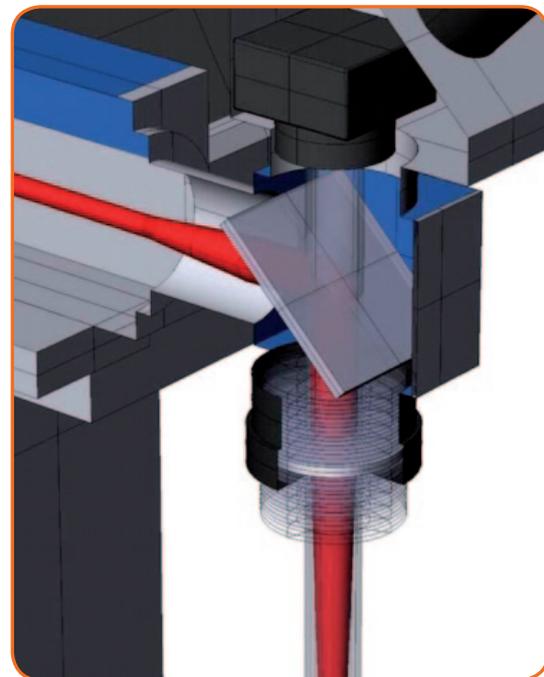
Highlights

- Work faster and more precise with an increase in productivity of up to 50%
- Automatic online focussing
- Accurate and rapid operating mode
- Coaxial distance regulation
- Measuring accuracy at 15 µm
- Fast and precise work
- 750 Hz scanning rate



Mode of operation

A laser beam of a wavelength of 655 nm is coaxially coupled in the processing laser. The radiation reflected back from the workpiece is absorbed by the sensor at a scanning rate of 750 Hz and evaluated by means of interferometry. The distance so determined is transmitted in form of a digital signal and processed in a computer controlled manner. A controller regulates the drive of the lens positioning at a precision rate of up to 50 µm.



Functional principle of the AUTOFOCUS

Innovative display

The laser system is intuitively operated via a 5" touchscreen display. All important parameters are clearly arranged, and the most important functions can be reached with a touch of a finger. In addition, all technical parameters can be stored and recalled again when needed.



Useful accessories

For the ECO LASER system we offer a whole range of accessories to facilitate your work.



Magnetic ball

The ideal accessory for simple handling of your welding parts.



Rotating device

Rotating device with fully adjustable 3-Jaw chuck, 90° tilting and 360° swivel makes working on tools quick and easy.



Telescope optics

The telescopic extension allows continuous real time changes in focal positions up to 20 mm.

Not enough? We will be happy to send you the current accessories catalogue by e-mail or post.

Technical data

POWER

	TYP: ECO 2600	TYP: ECO 3300	TYP: ECO 4600	TYP: ECO 6400
Lasertype	Nd: YAG	Nd: YAG	Nd: YAG	Nd: YAG
Max. mean power	100 W	120 W	160 W	200 W
Pulse peak power	3,5 kW	6 kW	7,5 kW	9 kW
Max. pulse energy	60 J	70 J	80 J	100 J
Pulse duration	0,4 - 20 ms	0,4 - 20 ms	0,4 - 20 ms	0,4 - 20 ms
Pulse frequency	0,5 - 20 Hz	0,5 - 20 Hz	0,5 - 20 Hz	1 - 20 Hz (100 Hz)
Focus diameter	0,2 - 2,0 mm	0,2 - 2,0 mm	0,2 - 2,0 mm	0,2 - 2,0 mm
Line voltage (V/Ph/Hz)	240 / 1 / 50 - 60	400 / 3 / 50 - 60	400 / 3 / 50 - 60	400/3/50
Line voltage (V/Ph/Hz)	US 110 / 1 / 50 - 60			

SYSTEM EQUIPMENT

Laser system

- Laser resonator inclusive resonator mechanics
- Pump chamber
- Laser rod
- Cavity
- Resonator mirror
- Safety shutter
- Beam extension
- Power supply including circuit breaker
- Power disconnecting switch
- Emergency stop switch
- Motor protection switch
- Extra low voltage power supply 24 VDC
- Interface with hardware monitoring function
- Lamp switch
- Industry controller for setting and display of power, pulse duration, pulse frequency with external trigger via foot switch
- Capacitor bank
- Internal water-air cooling system

Processing optics

- Variable beam expansion
- Beam deflection
- Safety glass
- LCD anti-glare
- Binoculars 10x
- Focussing lens

Linear system

- 4-axis controller
- Operation via joystick
- Traverse range z-axis: 400 mm (table)
- x-y axis for working table with stepper motor
- Positioning speed 0,5 - 15 mm/s
- Travel: x-axis: 200 mm / y-axis: 120 mm
- LED lightening
- Inert gas supply directly controlled via magnetic valve

Dimensions and weight

Dimensions: width 472 mm x height 1270 mm x length 1160 mm
 Weight: 190 kg net

wORLD of LASER



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YOUR ENGINEERING QUALITY IS ALWAYS ON OUR FOCUS